

CLAIMS

What is claimed is:

1. (Currently amended) A method for the extraction and desorption of at least one analyte in an analyte-bearing sample, said method comprising:

providing a tubular member sized for communication with an analytical device;
coating an interior surface of said tubular member with a sorptive coating, said sorptive coating selected to partition said at least one analyte from said analyte-bearing sample;
injecting said analyte-bearing sample into said coated tubular member;
sorpactively extracting said at least one analyte from said analyte-bearing sample;
removing said analyte bearing sample from said coated tubular member;
desorbing said at least one analyte from said coated tubular member; and
introducing said desorbed at least one analyte into said analytical device.

2. (Original) The method of claim 1, wherein:

said analytical device is a gas chromatograph;
said gas chromatograph having an injection port housing;
said injection port housing receiving said tubular member therein.

3. (Original) The method of claim 1, wherein said sorptive coating comprises at least one selection from the group consisting of:

(a) an immobilized polysiloxane polymer, having two attached functional groups, wherein the first attached functional group is selected from the group consisting of: alkyl, alkenyl, alkynyl, aryl, alkylaryl, alkenylaryl, alkynylaryl, haloalkyl, and haloaryl, and the second attached functional group is selected from the group consisting of: alkyl, alkenyl, alkynyl, aryl, alkylaryl, alkenylaryl, alkynylaryl, haloalkyl, and haloaryl;

- (b) a porous layer;
(c) other immobilized polymers above their glass transition temperature;
(d) an immobilized porous polymer;
(e) a sol gel; and
(f) an immobilized adsorbent.

4. (Original) The method of claim 3, wherein:
said injection step includes connecting said coated tubular member to a vessel;
said vessel containing said analyte-bearing sample; and
said removing step includes separating said coated tubular member from said vessel.
5. (Original) The method of claim 3, wherein:
said analytical device is a gas chromatograph;
said gas chromatograph having an injection port housing;
said injection port housing receiving said tubular member therein.
6. (Currently amended) A method for the extraction and desorption of at least one analyte in an analyte-bearing sample, said method comprising:
providing a tubular member sized for communication with an analytical device;
coating an interior surface of said tubular member with a sorptive coating, said sorptive coating selected to partition said at least one analyte from said analyte-bearing sample, said sorptive coating comprising at least one selection from the group consisting of:
 - (a) an immobilized polysiloxane polymer, having two attached functional groups, wherein the first attached functional group is selected from the group consisting of: alkyl, alkenyl, alkynyl, aryl, alkylaryl, alkenylaryl, alkynylaryl, haloalkyl, and haloaryl, and the second attached functional group is selected from the group consisting of: alkyl, alkenyl, alkynyl, aryl, alkylaryl, alkenylaryl, alkynylaryl, haloalkyl, and haloaryl;
 - (b) a porous layer;
 - (c) other immobilized polymers above their glass transition temperature;
 - (d) an immobilized porous polymer;
 - (e) a sol gel; and
 - (f) an immobilized adsorbent;injecting said analyte-bearing sample into said coated tubular member;
sorpactively extracting said at least one analyte from said analyte-bearing sample;
removing said analyte bearing sample from said coated tubular member;
desorbing said at least one analyte from said coated tubular member;

introducing said desorbed at least one analyte into said analytical device;
 said analytical device is a gas chromatograph;
 said gas chromatograph having an injection port housing; and
 said injection port housing receiving said tubular member therein.

7. (Currently amended) A tubular member for performing extraction and desorption, said tubular member comprising:

an inlet, an outlet, and a passageway therethrough;
 said passageway providing fluid communication from said inlet to said outlet;
 said passageway defined by an interior surface;
 said interior surface coated with a sorptive coating, said sorptive coating selected to partition said at least one analyte from said analyte-bearing sample; and

said sorptive coating comprises at least one selection from the group consisting of:

(a) an immobilized polysiloxane polymer, having two attached functional groups, wherein the first attached functional group is selected from the group consisting of: alkyl, alkenyl, alkynyl, aryl, alkylaryl, alkenylaryl, alkynylaryl, haloalkyl, and haloaryl, and the second attached functional group is selected from the group consisting of: alkyl, alkenyl, alkynyl, aryl, alkylaryl, alkenylaryl, alkynylaryl, haloalkyl, and haloaryl;

(b) a porous layer;

(c) other immobilized polymers above their glass transition temperature;

(d) an immobilized porous polymer;

(e) a sol gel; and

(f) an immobilized adsorbent.

8. (Original) The device in claim 7, further comprising:
 said interior surface having a uniformly smooth surface.

9. (Original) The device in claim 7, further comprising:
 said interior surface having an irregular surface.

10. (Original) The device of claim 7, wherein:
said tubular member is received into the injection port housing of a gas chromatograph.
11. (Currently amended) A tubular member for performing extraction and desorption, said tubular member comprising:
an inlet, an outlet, and a passageway therethrough;
said passageway providing fluid communication from said inlet to said outlet;
said passageway defined by an interior surface;
said interior surface having a uniformly smooth surface;
said interior surface coated with a sorptive coating, said sorptive coating selected to partition said at least one analyte from said analyte-bearing sample; and
said sorptive coating comprises at least one selection from the group consisting of:
 - (a) an immobilized polysiloxane polymer, having two attached functional groups, wherein the first attached functional group is selected from the group consisting of: alkyl, alkenyl, alkynyl, aryl, alkylaryl, alkenylaryl, alkynylaryl, haloalkyl, and haloaryl, and the second attached functional group is selected from the group consisting of: alkyl, alkenyl, alkynyl, aryl, alkylaryl, alkenylaryl, alkynylaryl, haloalkyl, and haloaryl;
 - (b) a porous layer;
 - (c) other immobilized polymers above their glass transition temperature;
 - (d) an immobilized porous polymer;
 - (e) a sol gel; and
 - (f) an immobilized adsorbent.
12. (Currently amended) A tubular member for performing extraction and desorption, said tubular member comprising:
an inlet, an outlet, and a passageway therethrough;
said passageway providing fluid communication from said inlet to said outlet;
said passageway defined by an interior surface;
said interior surface having an irregular surface;
said interior surface coated with a sorptive coating, said sorptive coating selected to partition said at least one analyte from said analyte-bearing sample; and

said sorptive coating comprises at least one selection from the group consisting of:

- (a) an immobilized polysiloxane polymer, having two attached functional groups, wherein the first attached functional group is selected from the group consisting of: alkyl, alkenyl, alkynyl, aryl, alkylaryl, alkenylaryl, alkynylaryl, haloalkyl, and haloaryl, and the second attached functional group is selected from the group consisting of: alkyl, alkenyl, alkynyl, aryl, alkylaryl, alkenylaryl, alkynylaryl, haloalkyl, and haloaryl;
- (b) a porous layer;
- (c) other immobilized polymers above their glass transition temperature;
- (d) an immobilized porous polymer;
- (e) a sol gel; and
- (f) an immobilized adsorbent.

13. (New) A method for the extraction and desorption of at least one analyte in an analyte-bearing sample for use with a heated gas chromatograph, said chromatograph including an injection port housing, said method comprising:

providing a tubular member sized for communication with an analytical device as an injection port liner, said injection port liner sized to fit within said injection port housing;
coating an interior surface of said tubular member with a sorptive coating;
injecting said analyte-bearing sample into said coated tubular member;
sorptively extracting said at least one analyte from said analyte-bearing sample;
removing said at least one analyte bearing sample from said coated tubular member;
installing said tubular member in said injection port housing of said gas chromatograph;
increasing the temperature of injection port housing by heating from said heated gas chromatograph until said at least one analyte is desorbed from said coated tubular member; and
introducing said desorbed at least one analyte into said analytical device.

14. (New) The method of claim 13, wherein said sorptive coating is selected to partition at least one analyte from the analyte-bearing sample.